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PCT/EP2004/052760

1

SEQUENCE LISTING

<110> Biogemma

<120> MEG1 endosperm-specific promoters and genes

<130> BGM 27 - WO

<150> EP 03292739.4

<151> 2003-11-03

<160> 64

<170> PatentIn version 3.2

<210> 1

<211> 370

<212> DNA

<213> Zea mays

<220>

<221> misc_feature

<223> promoter Meg1-1

| | |
|---|-----|
| <400> 1 | 60 |
| agccagaatt gtaaccttgg gttttccac acctcaaata gatatggata tagttatata | 60 |
| gatacatata gcaaattcac caaataatat agaggtatag atatacatat aacaagggt | 120 |
| atatacatat atatacatat atagaagata tagatggata gatacatatg atagaataga | 180 |
| atagataact tacaatttg tctaaaagag actaaatcac tgctaagttt ggtctttgg | 240 |
| gaataacttgc cagtgaattt gtttcgcta tagtatataataaacttgc actcttctag | 300 |
| gattatagta tatataagta tacactttc taggatcggt cgtgaggagt tccttaacat | 360 |
| ttcttgcac | 370 |

<210> 2

<211> 415

<212> DNA

<213> Zea mays

<220>

<221> misc_feature

<223> promoter Meg1-2

| | |
|--|-----|
| <400> 2 | 60 |
| atgagcttc gacacaggta ggttagtagta gagccagaat tgtaaccttgg gttttccca | 60 |
| cacctcaaat agatatacat ataggatata agatatacat agcaaattca ccaaataata | 120 |
| tagggatata gatatacatata taagaagggg tatatacatata gatatacatata tatatacat | 180 |
| atagatata agatatacatata gatatacatata ataacttaca attttgtcta aaagaaacta | 240 |
| aatcactgct aagtttggag tagcatatct ttggtaata cttgttagtg aattggttc | 300 |

| | |
|---|-----|
| cgctatagtatata agtatacact cttctaggat tatagtatat atatatatat | 360 |
| aagtatacac tcttcttagga tcaatcgtga ggagttcatt aaattgtctt ggcac | 415 |

<210> 3
<211> 376
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> promoter Meg1-3

| | | |
|--|--|-----|
| <400> 3 | | 60 |
| tcggaggcga cggtatcgat aagcctcaaa tagatataga tatagggata tagatagata | | 120 |
| tagcaaattc accaaataat ataggggtat agatatagat ataagaaggg gtatagat | | 180 |
| agatatagat atatagaaga tatagataga tagatagata tgatagaata gataacttac | | 240 |
| aattttgtct aaaagaaaact aaatcactgc taagtttggg gtagcatatc tttggtaat | | 300 |
| acttgctgt gaattggttt ccgctatagt atatatatat aagtatacac tcttcttagga | | 360 |
| ttatagtata tatatatata taagtataca ctcttcttagg atcaatcgtg aggagttcat | | 376 |
| aaaatttgtct tgccac | | |

<210> 4
<211> 121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> nucleotides 1 to 121 of promoter Meg1-1

| | | |
|--|--|-----|
| <400> 4 | | 60 |
| agccagaatt gtaaccttgg gttttccac acctcaaata gatatggata tagttatata | | 120 |
| gatagatata gcaaattcac caaataatag agaggtatag atatagat aacaagggt | | 121 |
| a | | |

<210> 5
<211> 414
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> MEG1-1 cDNA

<400> 5

| | |
|--|-----|
| cgtgaggagt tccttaacat ttcttgcgac atggagtaca aaaagagggt gcatgcgcta | 60 |
| gtgttttct cttaacttct ctaggatac ttgctgctc atgcgcattgg ggctgaagaa | 120 |
| gaaatttgc gagaaaaaaag agcacaatgc gctcaagggt ttcttccatg caaagataac | 180 |
| aagtgtact gttgcattgg gggccgaact catgattgct actatacgat ggctcagtgt | 240 |
| agtcatgcat gtttctaattt aaaaattaag atcactgttt ttatatacaa tgtaatggta | 300 |
| ggcaatgcta ttaataatac ataaggaaat tttagtttg gtattagaat ttttctgatt | 360 |
| gacgaaattt agtcagaccg atactagagg ctaaaaaaaaaaaaaaa aaaa | 414 |

<210> 6
<211> 75
<212> PRT
<213> Zea mays

<220>
<221> MISC_FEATURE
<223> MEG1-1

<400> 6

| | | | |
|---|---|----|----|
| Met Glu Tyr Lys Lys Arg Val Asp Ala Leu Val Phe Phe Ser Leu Leu | | | |
| 1 | 5 | 10 | 15 |

| | | |
|---|----|----|
| Leu Leu Gly Tyr Phe Ala Ala His Ala His Gly Ala Glu Glu Gly Ile | | |
| 20 | 25 | 30 |

| | | |
|---|----|----|
| Leu Arg Glu Lys Arg Ala Gln Cys Ala Gln Gly Phe Leu Pro Cys Lys | | |
| 35 | 40 | 45 |

| | | |
|---|----|----|
| Asp Asn Lys Cys Tyr Cys Cys Ile Gly Gly Arg Thr His Asp Cys Tyr | | |
| 50 | 55 | 60 |

| | | |
|---|----|----|
| Tyr Thr Met Ala Gln Cys Ser His Ala Cys Phe | | |
| 65 | 70 | 75 |

<210> 7
<211> 383
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> Megl-2 cDNA

| | | |
|---|--|-----|
| <400> 7 | | 60 |
| tcggcacgag gctacatgga gtacagaaag agggtggatg cgctagtgtt ttctcgta | | 120 |
| cttctcctcg gatactttgc tgctcatgca catggaaagg gtcatgtcac agatgatgtc | | |

ggtgtttcta ctccagctaa agaaggaatt atgcaaggaa acggagcacg atgcgttcta 180
gggtttcctc catgcaaaga taacaagtgc tactgctgca ttggggggcg aactcatgct 240
cgctactcta cgatggctga gtgttagacat gcctgcttct aaacacaata taagatcgct 300
gttattatat acattgtaat ggttaggtaat gctattaata atatatggta atttagttt 360
tgctaaaaaaaaaaaaaaa aaa 383

<210> 8
<211> 88
<212> PRT
<213> Zea mays

<220>
<221> MISC_FEATURE
<223> MEG1-2

<400> 8

Met Glu Tyr Arg Lys Arg Val Asp Ala Leu Val Phe Phe Ser Leu Leu
 1 5 10 15

Leu Leu Gly Tyr Phe Ala Ala His Ala His Gly Lys Gly His Val Thr
20 25 30

Asp Asp Val Gly Val Ser Thr Pro Ala Lys Glu Gly Ile Met Gln Gly
 35 40 45

Asn Gly Ala Arg Cys Val Val Gly Phe Pro Pro Cys Lys Asp Asn Lys
 50 55 60

Cys Tyr Cys Cys Ile Gly Gly Arg Thr His Ala Arg Tyr Ser Thr Met
 65 70 75 80

Ala Glu Cys Arg His Ala Cys Phe
85

<210> 9
<211> 786
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> MEG1-3 cDNA

<400> 9 ggcacgagga ggagttcctt aaattttctt gcgacatgga gtacagaaaag agggtgtggatg 60

| | |
|--|-----|
| cgctagtgtt tttctcgta ctcctcctca gatactttgc tgctcatgca catgggaagg | 120 |
| gtaagtgccta ctgctgcatt gggggcgatg tagggtttcc tccatgcaaa gataacaagt | 180 |
| gctactgctg cattgggggg cgaactcatg ctcgctactc tacgctggct gagtgttagtc | 240 |
| atgcctgctt ctaaacaaaa attaagatca ctgttattat atacattgtt atggtaggtt | 300 |
| atgctattaa taatatatgg gaattttagt tttggtatta tactttttc caattcacga | 360 |
| aataccctct aaaacctggc gtgacagggtg gcatacgagg agtggagggc agcgacggct | 420 |
| gcacagcgct gcatgcagt gcttgcattt gtagctcctc gttggcgatg cgtgtgcgac | 480 |
| caagagctct cggcacagac aggtcatgtc acagatgtat tcggagtttc tactccagct | 540 |
| aaagaaggaa ttatgcaagg aaacggagca cgatgcgtat tagggtttcc tccatgcaaa | 600 |
| gataacaagt gctactgctg cattgggggg cgaactcatg ctcgctactc tacgctggct | 660 |
| gagtgtagtc atgcctgctt ctaaacaaaa attaagatca ctgttattat atacattgtt | 720 |
| atggtaggt aatgcttattt ataatatatgtt ggaatttaag ttttggattt aaaaaaaaaaa | 780 |

aaaaaaa

<210> 10
<211> 72
<212> PRT
<213> Zea mays

<220>
<221> MISC_FEATURE
<223> MEG1-3, first ORF

<400> 10

Leu Leu Arg Tyr Phe Ala Ala His Ala His Gly Lys Gly Lys Cys Tyr
 20 25 30

Cys Cys Ile Gly Gly Asp Val Gly Phe Pro Pro Cys Lys Asp Asn Lys
 35 40 45

Cys Tyr Cys Cys Ile Gly Gly Arg Thr His Ala Arg Tyr Ser Thr Leu
 50 55 60

Ala Glu Cys Ser His Ala Cys Phe
65 70

<210> 11
<211> 667

<212> DNA
 <213> Zea mays

<220>
 <221> misc_feature
 <223> MEG1-4 cDNA

| | | |
|--|--|-----|
| <400> 11 | | 60 |
| aagaccacca cccttgcga atccggcacc catgccatgc ccacttccac cgccaaggcc | | 120 |
| atcgccgccc ccaagaccac cacccttgcga gaatccggca cccatgccat gtccacttcc | | 180 |
| accaccaagg cccccggcgc caccagcacc gtagccacta ccgcccggaa gaccaccacc | | 240 |
| gcctttgcgc aatccaccac ccatgccatg cccaatttcca ccaccttgc catggctcc | | 300 |
| accatgcga tggccaatgt cgcctccgag tccgcccacct ttgccatatac caccaccaag | | 360 |
| gccaccgcct ttcttaaat tgtcttgcga catggagtac agaaagaggg tggatgcgt | | 420 |
| agtgttttc tcgttacttc tcctcgata ctttgctgct catgcacatg gaaaggctaa | | 480 |
| agaaggaatt atgcaaggaa acggagcacg atgcgttgcg gggtttcctc catgcaaaga | | 540 |
| taacaagtgc tactgttgca ttggggggcg aactcatgct cgctactcta cgatggctga | | 600 |
| gtgtagtcat gcctgcttct aaacaaaaat taagatcgat gttattatat aaattgtaat | | 660 |
| ggttagtaat gctattaata atatatggga atttttagtt tgtaattaa aaaaaaaaaaa | | 667 |
| aaaaaaaa | | |

<210> 12
 <211> 76
 <212> PRT
 <213> Zea mays

<220>
 <221> MISC_FEATURE
 <223> MEG1-4

<400> 12

| | | |
|---|----|----|
| Met Glu Tyr Arg Lys Arg Val Asp Ala Leu Val Phe Phe Ser Leu Leu | | |
| 5 | 10 | 15 |
| 1 | | |

| | | |
|---|----|----|
| Leu Leu Gly Tyr Phe Ala Ala His Ala His Gly Lys Ala Lys Glu Gly | | |
| 20 | 25 | 30 |

| | | |
|---|----|----|
| Ile Met Gln Gly Asn Gly Ala Arg Cys Val Val Gly Phe Pro Pro Cys | | |
| 35 | 40 | 45 |

| | | |
|---|----|----|
| Lys Asp Asn Lys Cys Tyr Cys Cys Ile Gly Gly Arg Thr His Ala Arg | | |
| 50 | 55 | 60 |

Tyr Ser Thr Met Ala Glu Cys Ser His Ala Cys Phe
65 70 75

<210> 13
<211> 621
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> MEG1-5 cDNA

<400> 13
tgcaggatg gctggctatg gtgttgatgg tcagcgtatg atgggtgttg ttggtatgga 60
cagcagaggg atggatatg gtggcagacc tgagccacct cttccgcctg atgcatacg 120
cactctatat attgagggct tacctgcaaa ctgcacacga cgggagggtt cacatataatt 180
tcgcccattt gttggtttc gtgaagttcg tcttgtcaac aaggagtcca gacatcctgg 240
tggagatcca catgtgttgt gtttcgtcga ttttgcacaac cctgctcagg ctacaattgc 300
tctggaagca ttacaaggta atgtcacgga tgatgtcaat gtttctgc tc cagctgaaga 360
aggaattttg cgagaaaaaaaaa gagcacaatg cgctcaaggg tttcttccat gcaaagataa 420
caagtgtac tggcatttgc ggggcccgaac tcatgattgc tactatacga tggctcagtg 480
tagtcatgca tgcttctaattaaaaa gatcactgtt tttatatacata atgtaatgg 540
aggcaatgct attaataata cataaggaa ttttattttg gtattagaat ttttctgatt 600
gacgaaaaaaaaa aaaaaaaaaaaa a 621

<210> 14
<211> 142
<212> PRT
<213> Zea mays

<220>
<221> MISC_FEATURE
<223> MEG1-5

<400> 14

Ser Thr Leu Tyr Ile Glu Gly Leu Pro Ala Asn Cys Thr Arg Arg Glu
 20 25 30

Val Ser His Ile Phe Arg Pro Phe Val Gly Phe Arg Glu Val Arg Leu
 35 40 45

Val Asn Lys Glu Ser Arg His Pro Gly Gly Asp Pro His Val Leu Cys
 50 55 60

Phe Val Asp Phe Asp Asn Pro Ala Gln Ala Thr Ile Ala Leu Glu Ala
 65 70 75 80

Leu Gln Gly His Val Thr Asp Asp Val Asn Val Ser Ala Pro Ala Glu
 85 90 95

Glu Gly Ile Leu Arg Glu Lys Arg Ala Gln Cys Ala Gln Gly Phe Leu
 100 105 110

Pro Cys Lys Asp Asn Lys Cys Tyr Cys Cys Ile Gly Gly Arg Thr His
 115 120 125

Asp Cys Tyr Tyr Thr Met Ala Gln Cys Ser His Ala Cys Phe
 130 135 140

<210> 15
<211> 974
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> MEG1-6 cDNA

| | | |
|---|--|-----|
| <400> 15 | | 60 |
| tgcggaccca tgcgttgcg caacgcgtgc gggatccgta ccggagaag agacgggagc | | 120 |
| catgggcctc gagtccagca gcaaggccgc caccgcggc ggcagcgagc accagcagca | | 180 |
| gcagcggaaag aagaaggcca cccgcgcgcg cggccgcattc ctccaagcgg gagagggaga | | 240 |
| gggagcggga gcgggagcgg aacaaggagg cggacgaggt caccgtggag ctccgcgcgg | | 300 |
| tggggttcgg caaggaggtg gtgctgaagc agcggcggcg gatgcggcgg aggccgcgcc | | 360 |
| tgggcgagga ggagcgcgcg gccatcctgc tcatggcgct ctccctccggc gtcgtgtacg | | 420 |
| cctgacttgg ctagcaaccg cgccggcccc cgagacgcgcg cgcccaaagg cggcgaaagg | | 480 |
| agaggagggc ccgattcgct ggacgtgcgg catgatctga gccccagaca gatccgtccg | | 540 |
| tctggatcta tgctaagttt tcccggtaa gtagtagctc gtcggttcga acaaggcag | | 600 |
| ttaataatcc gtgtccgcgc taggctagca gctctgttcc tctctcccccc tcccggttgc | | 660 |
| tgctgtgttc ttgccaccgc ctcccttagt tgtaatcctg ccgcttagtag tgtgttagta | | 720 |
| gtagctgtcc tgctgttaacc ttctcttgcg atgttaaggag agattatatg gttaaaaaca | | |

| | |
|---|-----|
| cagatgatgt cagtgttct actccagcta aagaaggaat tatgcaagga aacggagcat | 780 |
| ggtgcgttgt agggtttcct ccatgcaaag ataacaagtg ctactgctgc attggggggc | 840 |
| gaacctcatgc tcgctactct acgatggctg agtgttagaca tgcctgttcc taaacaaaaa | 900 |
| ttaagatcgc tgttattata tacattgtaa tggtaggtaa tgcttattaat aatatatggg | 960 |
| aatttttagtt ttgg | 974 |

<210> 16
<211> 61
<212> PRT
<213> Zea mays

<220>
<221> MISC_FEATURE
<223> MEG1-6

<400> 16

| | |
|---|----|
| Met Val Lys Asn Thr Asp Asp Val Ser Val Ser Thr Pro Ala Lys Glu | |
| 1 | 5 |
| | 10 |
| | 15 |

| | |
|---|----|
| Gly Ile Met Gln Gly Asn Gly Ala Trp Cys Val Val Gly Phe Pro Pro | |
| 20 | 25 |
| | 30 |

| | |
|---|----|
| Cys Lys Asp Asn Lys Cys Tyr Cys Cys Ile Gly Gly Arg Thr His Ala | |
| 35 | 40 |
| | 45 |

| | |
|---|----|
| Arg Tyr Ser Thr Met Ala Glu Cys Arg His Ala Cys Phe | |
| 50 | 55 |
| | 60 |

<210> 17
<211> 23
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

| | |
|---------------------------|----|
| <400> 17 | 23 |
| tgctgctcat gcgcatgggg ctg | |

<210> 18
<211> 25
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

| | |
|--------------------------------|----|
| <400> 18 | 25 |
| ttgttatataa aaacagtgtat gttaaa | |

10

<210> 19
<211> 16
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 19

Asn Ala Pro Ala Glu Glu Gly Ile Leu Arg Glu Lys Arg Ala Gln Cys
1 5 10 15

<210> 20
<211> 27
<212> PRT
<213> Artificial

<220>
<223> Cystein-rich peptide

<220>
<221> MISC_FEATURE
<222> (1)...(27)
<223> Xaa = amino acid

<400> 20

Cys Xaa Xaa Xaa Xaa Cys Tyr Cys Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Tyr Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys
20 25

<210> 21
<211> 28
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 21
ggatccatga atcccaactt caacagtg

28

<210> 22
<211> 31
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 22

gaattcttat cggttatata tctggctctc c

<210> 23
<211> 23
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 23
tgctgctcat ggcgtatgggg ctg

23

<210> 24
<211> 28
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 24
ttagaaggcak gcatgwctac actsgagcc

28

<210> 25
<211> 23
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 25
atgcacatgg gaagggtcat gtc

23

<210> 26
<211> 28
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 26
ttagaaggcak gcatgwctac actsgagcc

28

<210> 27
<211> 20
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 27
gcatagcagg agtggagggc

20

<210> 28
<211> 21
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 28
gaagcaggca tgactacact c

21

<210> 29
<211> 20
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 29
tggccaatgt cgcctccgag

20

<210> 30
<211> 28
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 30
ttagaagcak gcatgwctac actsagcc

28

<210> 31
<211> 22
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 31
atggctggct atggtgttga tg

22

<210> 32
<211> 21
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 32
gtgcagtttg caggttaagcc c

21

<210> 33
<211> 25
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 33
tgtacgcctg acttggctag caacc

25

<210> 34
<211> 28
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 34
ttagaaggcak gcatgwctac actsagcc

28

<210> 35
<211> 22
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 35
gcaacgtacc gtaccttcc ga

22

<210> 36
<211> 24
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 36
acgctgcatt caattaccgg gaag

24

<210> 37
<211> 24
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 37
acacctaaaa tagatatggta tata

24

<210> 38
<211> 29
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 38
gttatctatt ctattctatc atatctatc

29

<210> 39
<211> 30
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 39
gatatacgata tatagaagag atatacgatgg

30

<210> 40
<211> 29
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 40
gttatctatt ctattctatc atatctatc

29

<210> 41
<211> 29
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 41
agatagatcatat gatagaatag atagataac

29

<210> 42
<211> 29
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 42
gttatctatt ctattctatc atatctatc

29

<210> 43

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15

<211> 28
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 43
attttgtcta aagagactaa atcactgc

28

<210> 44
<211> 29
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 44
gttatctatt ctattctatc atatctatc

29

<210> 45
<211> 24
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 45
acacctcaaa tagatatgga tata

24

<210> 46
<211> 38
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 46
ccaaattcact gggttatcta ttctattctt tcataatct

38

<210> 47
<211> 24
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 47
acacctcaaa tagatatgga tata

24

<210> 48
<211> 38

<212> DNA
 <213> Artificial

<220>
 <223> oligonucleotide

<400> 48
 ccaattcact ggccatctat atcttctata tatctata

38

<210> 49
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <223> oligonucleotide

<400> 49
 acacacctaaa tagatatggaa tata

24

<210> 50
 <211> 38
 <212> DNA
 <213> Artificial

<220>
 <223> oligonucleotide

<400> 50
 ccaattcact ggccccttgt tataatctata tctataacc

38

<210> 51
 <211> 1041
 <212> DNA
 <213> Zea mays

<220>
 <221> misc_feature
 <223> MRPL

| | |
|--|-----|
| <400> 51 ctgttaacaac ttgtgttagta cttaaccctt cgcacccat gaatccaaac ttcaacagtg | 60 |
| tgtggagcgc tcccgagatc aatatgatga actcactcat cactagtac atcgccaaca | 120 |
| acacctacac aaacaacaac cagcatgttg tggcaagtgc tagtgccatt gtgaaccaca | 180 |
| ataactttgg gatgccaacg gaggtcggttc cacccgtgga caacatggac atgatgcaag | 240 |
| gctatctaattt ggctgatacg gatgccatga ggcttggtaa gggacaacaa catatgccaa | 300 |
| atgttggttcc taatcaaagg aggcattgcag tgaagttttg gactacagat gagcacagga | 360 |
| atttcccttcg tggtagaa gtgtttggcc gtggtaatg gaagaacatc tccaagtact | 420 |
| tcgtccccac aaggacacca gtgcagatct ctagccatgc acagaagtat ttccgcaggc | 480 |

| | |
|---|------|
| aggagtgcac cacagagaaa caacgctta gcatcaacga tggcgttc tacgacacac | 540 |
| agccatgggt gcggcagaac aactcctcta gcagctggga ggcgctcacc ttcaactgctg | 600 |
| gccgtgcgtt caataataca aactactgtg ctttaacag cttccgtat gccagcagcc | 660 |
| aggcaagtaa caaccaggtt gctacatgga ttacagacca gcaggcaact gcaagttctt | 720 |
| ctatacgctcc tccagcgacg gaggagagcc agatataatccgataatataatataatgg | 780 |
| catcagcagc tgggagagggc ttcttcata tataatcaat agtagatag atatggacaa | 840 |
| cgtccattga ctatTTTtat ttctatctat atgttttgta tccaatgtat catgtaaaac | 900 |
| ctatTTGGTT gttaaagggtc attagatcca tactatataat gggctagaaa cagtttcatt | 960 |
| gaaatTTGCC cctgagcaat acaatgaaat ttaccaatg tgTTTATTAT atattaatgt | 1020 |
| gtctaaaaaa aaaaaaaaaa a | 1041 |

<210> 52
<211> 242
<212> PRT
<213> Zea mays

<220>
<221> MISC_FEATURE
<223> MRP1

<400> 52

| | | | |
|---|---|----|----|
| Met Asn Pro Asn Phe Asn Ser Val Trp Ser Ala Pro Glu Ile Asn Met | | | |
| 1 | 5 | 10 | 15 |

| | | | |
|---|----|----|--|
| Met Asn Ser Leu Ile Thr Ser His Ile Ala Asn Asn Thr Tyr Thr Asn | | | |
| 20 | 25 | 30 | |

| | | | |
|---|----|----|--|
| Asn Asn Gln His Val Val Ala Ser Arg Ser Ala Ile Val Asn His Asn | | | |
| 35 | 40 | 45 | |

| | | | |
|---|----|----|--|
| Asn Phe Gly Met Pro Thr Glu Val Val Pro Pro Val Asn Met Asp | | | |
| 50 | 55 | 60 | |

| | | | |
|---|----|----|----|
| Met Met Gln Gly Tyr Leu Met Ala Asp Thr Asp Ala Met Arg Leu Val | | | |
| 65 | 70 | 75 | 80 |

| | | | |
|---|----|----|--|
| Gln Gly Gln Gln His Met Pro Asn Val Val Pro Asn Gln Arg Arg His | | | |
| 85 | 90 | 95 | |

| | | | |
|---|-----|-----|--|
| Ala Val Lys Phe Trp Thr Thr Asp Glu His Arg Asn Phe Leu Arg Gly | | | |
| 100 | 105 | 110 | |

Leu Glu Val Phe Gly Arg Gly Lys Trp Lys Asn Ile Ser Lys Tyr Phe
 115 120 125

Val Pro Thr Arg Thr Pro Val Gln Ile Ser Ser His Ala Gln Lys Tyr
 130 135 140

Phe Arg Arg Gln Glu Cys Thr Thr Glu Lys Gln Arg Phe Ser Ile Asn
 145 150 155 160

Asp Val Gly Leu Tyr Asp Thr Gln Pro Trp Val Arg Gln Asn Asn Ser
 165 170 175

Ser Ser Ser Trp Glu Ala Leu Thr Phe Thr Ala Gly Arg Ala Tyr Asn
 180 185 190

Asn Thr Asn Tyr Cys Ala Phe Asn Ser Leu Pro Tyr Ala Ser Ser Gln
 195 200 205

Ala Ser Asn Asn Gln Val Ala Thr Trp Ile Thr Asp Gln Gln Ala Thr
 210 215 220

Ala Ser Ser Ser Ile Ala Pro Pro Ala Thr Glu Glu Ser Gln Ile Tyr
 225 230 235 240

Asn Arg

<210> 53
 <211> 83
 <212> PRT
 <213> Zea mays

<220>
 <221> MISC_FEATURE
 <223> MEG1-3, second ORF

<400> 53

Met Gln Trp Leu Ala Phe Val Ala Pro Arg Trp Arg Cys Val Cys Asp
 1 5 10 15

Gln Glu Leu Ser Ala Gln Thr Gly His Val Thr Asp Asp Val Gly Val
 20 25 30

Ser Thr Pro Ala Lys Glu Gly Ile Met Gln Gly Asn Gly Ala Arg Cys
 35 40 45

Asp Val Gly Phe Pro Pro Cys Lys Asp Asn Lys Cys Tyr Cys Cys Ile

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19

50

55

60

Gly Gly Arg Thr His Ala Arg Tyr Ser Thr Leu Ala Glu Cys Ser His
65 70 75 80

Ala Cys Phe

<210> 54
<211> 16
<212> PRT
<213> Artificial

<220>
<223> peptide

<400> 54

Pro Cys Lys Asp Asn Lys Cys Tyr Cys Cys Ile Gly Gly Arg Thr His
 1 5 10 15

<210> 55
<211> 23
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 55
gggccaacag ttcctgatta acc

<210> 56

<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 56
ccccatttac tgcctcttcg

23

<210> 57
<211> 37
<212> DNA
<213> Artificial

<220>
<223> MEG promoters conserved sequence

<400> 57
atatacatatag atatacgaaa ttcacccaaat aatatacg

37

<210> 58
<211> 1350
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> MEG1-1 genomic sequence

<400> 58

| | |
|--|------|
| ctagttcagt aatagggtgtc gaggtgttct cagagttcca gtacttcgac gagtttaggat | 60 |
| aggcttaggac atcccctagt cagctgcctg tgggtgggta atttacgttg gcttcgttcc | 120 |
| aattctgtgt actttgattt atattatgtt aattactcta gtctttata ttatttctta | 180 |
| ctcttttattt ttattcgaag cattgtgtta tggatgagtca tttatgttaat tgctatgtac | 240 |
| gtgagtttttgc atccttagcac gtacatgggtt cgcatcggtt ttaccttcta aaacctgggg | 300 |
| tgacaggtgg catagcagga gtggagggca gcgcacggctg cacagctctg cgtgcagtgg | 360 |
| cttgcattgtt ttgctcctcg ttggcgatgc gtgtgcgacc atgagctctc gacacaggtta | 420 |
| ggtagtagta gagccagaat tgtaaccttg ggttttccca cacctcaaata agatataagat | 480 |
| ataggatata agatagatata agcaaattca ccaaataata taggggtata gatataagata | 540 |
| taagaagggg tatagatata gatatagata tatagaagat atagatagat agatagatata | 600 |
| gatagaatag ataacttaca attttgtcta aaagaaaacta aatcactgct aagtttggag | 660 |
| tagcatatct ttggtaataa cttgcttagtg aattgggttc cgctatagta tatataatata | 720 |
| agtatacact cttcttaggat tatagtatata atatataatata aagtatacac tcttcttagga | 780 |
| tcaatcgtga ggagttcatt aaattgtctt gcgcacatgga gtacagaaag agggtggtatg | 840 |
| cgcttagtgg tttctcgatc cttctcctcg gatactttgc tgctcatgca catggaaagg | 900 |
| gtaaatgaaa actatacaga catgtgtgtc catgcttaga tagatctaga caattttagaa | 960 |
| gatgttatta tatgataccg tggatcat ggcgaattgc taatgtatcg caatccccctg | 1020 |
| tgttaaattt ctcaaataat ttcaatgtt attattctcg aggcatgtt tggtaataga | 1080 |
| actcttatcc tataccttct actaggatcat gtcacagatg atgtcgtt ttctactcca | 1140 |
| gctaaagaag gaattatgca aggaaacgga gcacgatgctt ttgttagggtt tcctccatgc | 1200 |
| aaagataaca agtgctactg ctgcattggg gggcgaactc atgctcgcta ctctcgatgg | 1260 |
| ctgatgtaga catgcctgct tctaacaataa taagacgttg tatataatcat gtatggagga | 1320 |
| atttataata ttatggaaatt agttgtatata | 1350 |

<210> 59
<211> 127
<212> DNA

<213> Artificial

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<223> nucleotides 1-127 of promoter MEG1-1

<400> 59

agccagaatt gtaaccttgg gttttccac acctcaaata gatatggata tagttatata 60

gatagatata gcaaattcac caaataatat agaggtatag atatacatat aacaagggt 120

atataata 127

<210> 60

<211> 25

<212> DNA

<213> Artificial

<220>

<223> oligonucleotide

<400> 60

acacctcaaaa tagatatggaa tata 25

<210> 61

<211> 25

<212> DNA

<213> Artificial

<220>

<223> oligonucleotide

<400> 61

gtcgcaagaa atgttaagga actcc 25

<210> 62

<211> 500

<212> DNA

<213> Zea mays

<400> 62

caggagtggaa gggcagcgac ggctgcacag ctctgcgtgc agtggcttgc attgtttgct 60

cctcggttgc gatgcgtgtg cgaccatgag ctctcgacac aggttaggtag tagtagagcc 120

agaattgtaa cttgggttt tccccacact caaatagata tagatataagg gatatagata 180

gatatacgaa attcaccaaa taatataggg gtatagatat agatataaga aggggtata 240

atatacatat agatataatag aagatataaga tagatataata gatatgatag aatataaac 300

ttacaatttt gtctaaaaga aactaaatca ctgctaagtt tggagtagca tatcttttgt 360

gaataacttgc tagtgaattt gtttccgcta tagtatataat atataagtat acactttct 420

aggattatag tatatatata tatataagta tacactttc taggatcaat cgtgaggagt 480
tcattaaatt gtcttgcgac 500

<210> 63
<211> 32
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 63
atcgatgaat tcgctcaagg gtttcttcca tg 32

<210> 64
<211> 30
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide

<400> 64
ggatccctcga gcctctagta tcggcttgac 30